

# Plants In Paper Bands

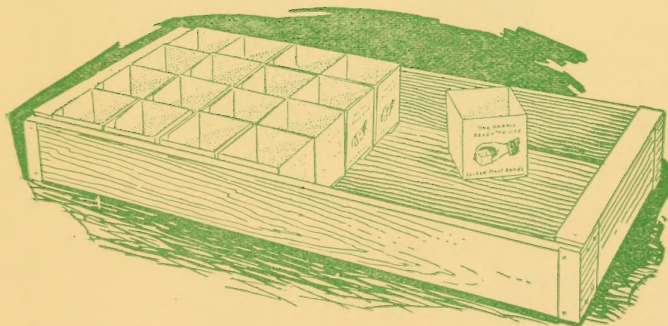


BY  
**A. W. HARRIS**



PLACING THE BANDS

THE  
HISTORY AND METHOD  
OF  
GROWING PLANTS  
IN  
PAPER BANDS  
AND POTS



*Arthur*  
A. W. HARRIS

SLEEPY EYE, MINN.

PRICE 35 CENTS.



SB 121

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TO MY GOOD FRIENDS OF SLEEPY EYE, WHO  
HAVE HELPED ME IN MANY WAYS, I DEDI-  
CATE THIS LITTLE BOOK.

*A. W. Harris*

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## PART ONE

# HISTORY AND DEVELOPMENT OF PAPER PLANT BANDS

Paper Plant Bands and Pots are no longer an experiment. A few years ago I met a group of Market Gardeners at a horticultural convention. They were telling of using paper bands made up by hand for more than 20 years back. They were well satisfied with the results attained, but said that where a great number had to be used the extra labor involved in preparing the bands was more than the benefits derived.

In the last few years there have been several makes of paper bands and pots placed on the market. Some of these take more time to make up than others and the greatest saving is made with the nearest Ready-to-Use varieties. This is especially so where large quantities are used.

A pasted type has been placed on the market, but it will be found that the ends only hold together until the plants are removed from the flats when great care must be exercised or the roots will be damaged. Especially is this so if the plants are handled several times from sale to setting-out.

### The Harris Ready-to-Use Locked Plant Band

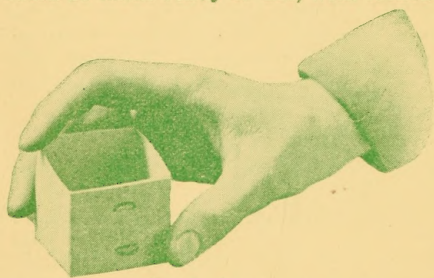
In February, 1915, the agricultural teacher of our city came to me to get several hundred small pots. I was short myself at that time. I showed him an ad of Paper Dirt Bands then running in one of the leading trade magazines. I had been interested, but for one reason or another had put off trying these bands out. He seemed to think they were just what he wanted, so we ordered 10,000 of the two-inch size. I will never forget how disappointed we were when they arrived. The advertisement showed a lot of square bands ready-to-use. What we got were only plain strips of paper with directions for folding them and making them up. March is the heavy transplanting month up here, and on account of the large amount of work I had to do, I only made up a few hundred of these bands. They were hard to place in the flats, the ends being loose they would not stay in shape, so that I became disgusted and threw the rest of the lot out in the store room.

The plants I had in the bands did fine. When selling time came I charged 10 to 15 cents a dozen more for these plants. They were worth it, but I had to talk a lot to get people to take them in preference to the loose plants.

From the success I had with these few plants I decided to use the rest of the bands, so in the winter of 1915, I hired boys to take these bands home with them and make them up, pasting the ends and in the spring of 1916 I used these. The pasted ends held them in place in the flats fine. When transplanting time came the people who had bought from me the year before came back with their neighbors asking for more plants in bands, saying that they had earlier tomatoes and cabbage than they had ever had before. The only trouble was that in handling, a lot of the bands would come loose from the plants. The pasted end, of course, only held them together temporarily.

In the winter of 1916, I bought a ream of cardboard from my wholesale paper house and had them cut it up for me at a small cost. The spring of 1917 was my third season with plants in bands. My plants were so well advertised that people came from miles around to get them and were willing to pay a considerable higher price for them than for the loose plants.

I was satisfied that Paper Plant Bands were a success, if they could be made ready-to-use, with locked ends. I studied out a number of methods of locking the bands, looking for something that could be made by a machine and at last made up by hand, a locked band like the one we are now making. During the summer I studied out a machine which would do this work, planning the machine in my mind. It was necessary that the machine would take a roll of paper, score the band at the corners, cut the tongues and



Ready to use.

slots, lock the ends, sever the band from the continuous strip, fold the band and pack it in a carton. This I had all planned out before making a piece, and it was not until December, of 1917, that I started making the machine.

I probably would not have started at that time if I had not seen an ad for a new locked band. My band seemed to be so much better that I started making a machine. From old sewing machines, telephone generator wheels and other junk parts, I developed my model and by April 1918, I was making bands. In May I sent this machine to Washington for application for patent. In the fall of 1918 I got my model back and, by demonstrating the machine and the advantages of the bands, got local capital enough interested to form a company. We started at once to rebuild the model adding several features and correcting some of the faults. In August, of



1918, I went to Minneapolis to a machine designer. Several months were spent there drafting, and in January, of 1919, we hired our own draftsman and returned to Sleepy Eye. We had our own shop and machinist, and completed our first designed machine July, of 1919.

Our latest model machine is really several separate machines in one, so designed that each performs its work in continuous sequence. The paper is printed, the corners scored and the tongues and slots of the lock cut. The paper is fed onto a square former upon which the ends are locked and the band severed from the strip of paper. From the former it is ejected into the folder. It drops



Ready to sell.

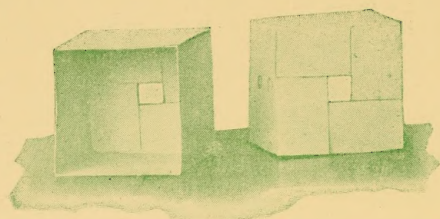
from the folder to the reverser where every other band is reversed, thus saving seven inches in the length of the package, on account of there being three thicknesses of

paper at one end of the band and two on the other. From the reverser it drops to the packer and 250 are counted out by the machine and placed in the carton. The machine then automatically stops long enough for one to remove the full carton and put an empty one in place, whereupon the machine resumes operation. If the paper breaks or a band misses the machines automatically stop and warn the operator that something is wrong.

These machines are quite complicated and cost several thousand dollars each to make, but they are so automatic in operation that one operator can handle several, and will turn out three to four thousand bands an hour from each machine.

We found that it was impractical to design this machine so that any size band could be made on the machine. For this reason it cost us considerable to get started and even now we have only four size of bands to offer. We expect to add two more sizes as soon as possible and more if the trade demands them. We are able to make these bands in any depth from two inches to four inches, but on account of not wishing to carry too many depths in stock we have picked a depth for each most suitable to the size.

During our first two years' sales, we found that there were a great many growers who wanted a pot or band with a bottom. Although these machines were not designed for this purpose, it was



The Band with the folding bottom.

to-Use Bands and Pots are being shipped to every state in the Union and to Canada.

The greatest difficulty has been the high freight and express rates. Eventually we expect to have several branches in different parts of the country and manufacture closer to the market. Starting as we did during the high prices of the war and the hard times following, we are well satisfied with the results of our venture, and know that eventually our Ready-to-Use Bands and Pots will be used by every up-to-date florist and market gardener in the country.

## PART TWO

### ADVANTAGES OF THE BANDS

**SPACE SAVED**—The space in greenhouses, hot-beds and cold frames is necessarily limited, and the cost of production will be largely a matter of how fully that space is utilized, therefore, exactly the required room should be given to each plant, no more, no less. It is impossible to get the required spacing by methods of growing in flats and boxes without partitions. Even though the surface spacing may be correct, the roots of part of the plants are sure to encroach upon the territory of the others in which case both are sure to suffer. The crowding of root space by each other has the same effect as their being crowded by weeds, and when transplanting it is impossible to separate the tangled roots without stripping off the hair-like feeding rootlets. This full utilization of space may be accomplished only by growing in square bands or pots and not in round or cone-shaped ones. A  $2\frac{1}{2}$ -inch clay pot contains 7.57 cubic inches; a square band  $1\frac{1}{4} \times 1\frac{3}{4} \times 2\frac{1}{2}$  inches deep contains 7.65 cubic inches; a two-inch clay pot contains 3.16 cubic inches. When placed in rows on a bench so that the pots on one row fit into the spaces between the pots of another row a  $2\frac{1}{2}$ -inch pot takes up 6.48 square inches; a two-inch pot takes up 4.80 square inches, while a  $1\frac{1}{4}$ -inch band takes up only 3.06 square inches. Now, in cubic contents the  $1\frac{1}{4}$ -inch band has more than twice as much room as the two-inch pot and slightly more room than a  $2\frac{1}{2}$ -inch pot, while it takes up less than three-fourths of the space occupied by a two-inch pot and less than one-half the space occupied by a  $2\frac{1}{2}$ -inch pot.



Experience has shown that 2½ and 3 inches is the best depth for plant bands, as with this depth there is plenty of nourishment for the plants as long as it is proper for them to remain in the flats. If the plants are left too long in the bands the roots will have spread at the bottom which will cause a set-back when they are transplanted.

**LABOR SAVED**—The labor involved in growing plants consists mainly in planting, transplanting, watering and moving from one place to another. In the original planting it makes little difference when it comes to labor, where it is done, but it makes a whole lot of difference when it comes to transplanting whether we transfer the plant bodily together with its proper quota of earth nicely inclosed in a dirt band, or whether we dig them out of a box of dirt, when great care must be exercised to prevent injury to the plant. In event the plant is injured, still more labor is incurred in replanting it.

**TIME SAVED**—In moving from place to place where bands are used, a flat containing one hundred or more may be picked up and carried to the new place. For those who ship young plants, the paper bands are indispensable, as they handle with less labor and without danger of injury to the plants. All that is required is to crate the flats and they are sure to arrive at their destination in good shape. The cost of plant bands as compared with earthen pots is small and besides there is no breakage.

**THE MAIN ADVANTAGE—EARLIER CROPS**—Larger and more mature plants are secured by starting them early. The transplanting set-back which necessarily occurs every time a plant is disturbed, can be taken care of under the glass where it can be more readily controlled. Only when grown in bands or pots, are large plants transplanted without a set-back.

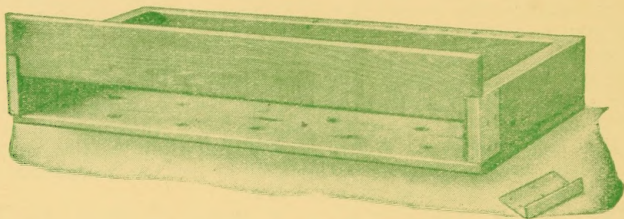
It has been found by actual experience that with plants grown, part of them in clay pots and part in paper bands and both receiving the same care, those grown in the dirt bands about double the growth of those in the pots in the same length of time. Plants grown by this method are not injured in transplanting as the root system is not disturbed. They do not wilt, but will continue their growth and arrive at maturity from two to three weeks earlier than when transplanted from a flat in the old way. This is especially true in trying to transplant when the ground is in a very dry condition as it is in the South when planting the fall crop. By using plants in bands one can plant during the driest weather.

Not only is the plant band method of growing adaptable to such plants as are ordinarily started under glass and later transplanted to the open field, but plants which are not ordinarily started in that way may have the advantage of an early start. Among this latter class of plants we may mention sweet peas, squash, cucumbers, melons, sweet corn, beans, etc.

**TIME SAVED WATERING**—Plants growing in paper bands will require only half the watering of those grown in round or cone-shaped pots. This is because the spaces between the pots gives a greater evaporation surface while with the square bands the only evaporation that takes place is from the surface of the earth, which is Nature's way.

## Method of Growing Plants in Paper Bands

**PREPARATION OF FLATS**—If flats are used be sure there is plenty of drainage. There should be several cracks in the bottom 3-16 or  $\frac{1}{4}$  of an inch wide. Even fine soil, after once watered and settled, will not go through such a crack to any great amount. If there are not enough cracks, bore one-half inch holes in the bottom boards, and plenty of them. If benches are used treat them the same way. When making new flats make one side detachable by nailing angle pieces of heavy galvanized sheet iron to each of the ends. This will be of advantage in observing the amount of moisture in the soil, and in removing the plants when they are to be set out. The flats



A handy style of Flat.

should be at least one-half inch deeper than the bands, in order that when filling with soil there will be enough to fill the bands after the soil has been settled by planting and watering; and besides, unless there is a slight retaining wall around the top of each flat the water is apt to run off instead of soaking the soil thoroughly. In making the flats be sure to use Pecky Cypress, which can be secured all ready cut to order from any greenhouse supply house. It will repay the extra cost in the length of time it will last.

**SOIL**—Avoid a heavy soil, as it tends to retain too much moisture. If your soil is at all heavy add sand and humus. For seedlings make it considerable lighter than you would for large plants. A small quantity of lime will also help to keep it sweet. Fill the flat level with the top.

**STARTING THE PLANTS**—Start your seed in flats as ordinarily. When they are large enough to transplant handle them by replanting the seedlings about one inch apart, in ordinary flats of soil. When they have grown so as to cause their tops to cover the flat, again transplant, giving them more top room, at the same time grading the plants so that plants of a size will be together. This may be done several times. Each time they will be retarded in top growth until the root system has recovered from the shock, but this will cause the roots to be compact and at no time will there be a severe set-back, such as results when a plant is grown in one place

for any length of time and then transplanted, in which case the plant, with the roots grown long, with the feeding rootlets scattered the whole length of the main root system will receive a severe set-back when part of the system is lost in handling. This is why small plants do not receive the set-back in transplanting which large plants do and why continued transplanting helps to raise large plants which can be transplanted without a set-back.

**SELECTING THE RIGHT BANDS**—We are sure that after trying out all other makes you will eventually come to our bands, because there are no other Ready-to-Use Bands made. Remember that where paste is used to fasten the ends it will only last until the first watering and that the nearer a band is to being Ready-to-Use the greater saving there will be in labor. The so called locked bands put out by several other firms come to you as strips of paper which have to be made up before use and you will find that it will take you over three hours per 1,000 to put them together.

There are a number of growers who prefer paper pots and others who prefer bands, and it really is in most cases only a matter of preference. On account of their being more paper used in making the pots they cost more. The bottoms help to retain the soil when handling, and this is especially so when the plants are handled several times. If the plants are taken direct to the field from the flat or bench a bottom only adds to the cost. Select a band or pot in size conforming to the amount of top growth the plant will have when it is ready to set out. Corn will take a smaller band than cucumbers, but do not try to get any of these kind of plants too large, as if you do the roots will have spread on the bottom and the plants will suffer a set-back if not die when moved.

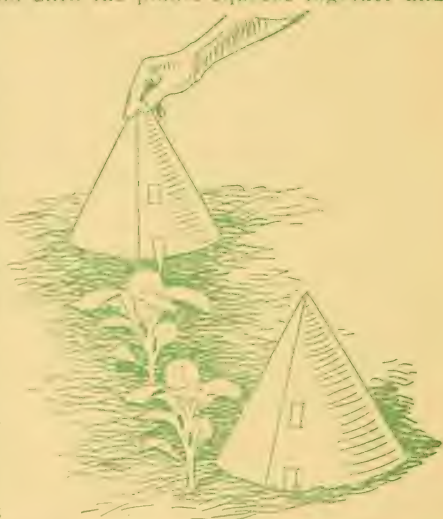
**PLANTING**—After placing the bands in the flats (see cut inside front cover) and filling with dirt, with a dibble make holes large enough in which to insert the roots of the seedlings, (see inside back cover) in the approximate center of each band. Select plants of a size. The grading of plants is very necessary, as small ones in between larger ones are apt to die and if they do not, when plants are ready for the market, either these will have to be thrown away or given to the customers. If there is a large bunch of roots push them down with the point of the dibble and press the plants firmly into the soil with the thumbs and fore fingers of each hand. It is well to have some loose soil on top of the flat and after planting a row across fill up the bands where the soil has been compressed around each plant. After planting rap the flat sharply to even off the soil and sprinkle over the top enough fine soil to fill up nearly to the edge of the flat.

With such plants as cucumbers, melons, squash, corn, sweet peas, etc., two or three seeds should be sown direct in the bands and all but one plant pulled out when the strongest can be selected to remain. Plants such as tomatoes, when wanted large, should be transplanted several times before placing them in the bands and this should not be done until three or four weeks before time for planting out.



**WATERING**—When first planted the seedlings should be soaked good and then not watered again until on the dry side and from then on it rests with the grower whether the plants will be a success or a failure. There is no work connected with growing plants under glass more difficult to give directions for, but there is one main rule to follow: **NEVER WATER A PLANT UNTIL IT NEEDS IT.** A plant needs water or it does not. It is never a question of quantity. It is better to hold your plants on the dry side than keep them constantly wet and one only can tell when to water by the condition of the soil itself.

**WHEN READY TO SET OUT**—To remove plants from the flat, grasp the flat by the sides and tilt it at an angle of about 80 degrees, jar one end against the ground until the plants squeeze together and an inch or so of space is gained at the upper end. Repeat the operation with one side against the ground. The plants will now have loosened up so that they can be easily removed with a putty knife or a small trowel. With flats made with a detachable side the trowel may be readily inserted under the bands, but it is well anyway to jar the flats as above, as it loosens up the bands so that they separate more readily. In most cases it is better not to remove the bands from the plants when transplanting, for in doing so more or less injury is apt to occur to the roots. Set deep enough to entirely cover the band. Large plants should be set even deeper. Fill the hole around the plant with water and then fill it with earth, leaving dry earth on top. It is not necessary to shade in the hottest dry



No hunting for tin cans.

Set your plants out as early as possible after the ground is warm, as the earlier plants are in the field, the earlier will they mature, unless checked by weather conditions. I only found this out after several years. I thought that if I grew my plants large and kept them from being stunted they would mature as early as those set out earlier in the field; but others who got plants from me and planted them before I did got earlier crops. Now, I set my plants out just as early as possible and in case of frost, cover them with cone-shaped jar paper covers. Of course, I sometimes lose part of them but as I have plenty of plants on hand I can easily replant.

## Faults

The one fault of the band method of growing is a tendency to over-water, especially is this so during cloudy weather. The dirt on top will appear dry and naturally one will water these with the rest of the bench, but if the dirt deeper down is examined it will be found still quite moist. As an actual fact, plants in bands do better if neglected somewhat, while plants in small pots if neglected will soon be spoiled. One season I had several flats of smilax in bands and several hundred in two-inch pots on a high shelf, where they were seldom watered. The plants in the bands made several times the growth of the ones in the pots.

The amount of moisture removed from the soil depends upon two things: First—Direct evaporation from the soil itself. Second—That which takes place through the leaves. The greater the number of plants occupying the same area, or rather the greater amount of leaf area covering the given soil area, the greater will be the amount of moisture absorbed from the soil. In pots, evaporation takes place not only from the top but through the pot itself, and the leaf area as compared to the amount of soil in the pot is large, causing the pot plants to use an excessive amount of water in hot weather. This means repeated watering, while in cloudy weather, only a normal amount is required. In bands, in sunny weather, the evaporation will be normal as, outside of the amount of moisture used by the leaves themselves, there is very little evaporation. In cloudy weather there will be hardly any evaporation and with plants just set out even in sunny weather little evaporation from the leaves takes place, as until the roots get accustomed to their new places and the new roots have grown to take the place of the ones torn off, the only evaporation will be from the soil.

When seedlings are transplanted to either benches or flats they are spaced about one inch apart. There are several times as many occupying the same area as when planted in bands, except the one-inch size, which can only be used for plants with little top growth or ones which are to be held only a short while before planting out, and the evaporation through the leaves removes several times the amount of moisture removed by the plants in bands under the same conditions. Now, the point is, as every grower knows, when the soil is repeatedly watered without a chance to dry out it becomes sour and hardly any plant, especially small seedlings, will thrive in sour soil. Too little water shows up very quickly by the plants wilting and if the plants are watered again at once no harm will result, but it takes a couple of weeks of over-watering to show up in the plants and several weeks of careful watering to restore them to health, if possible to do so at all. A great many experienced growers have made this mistake, and when their plants turned yellow and became stunted, blamed the bands for it. They were used to growing plants in pots or loose soil.

An Eastern manufacturer of bands claims that most kinds of paper and all kinds of cardboards are poisonous to plants. The first years we manufactured bands we were using a chip-board. A num-

ber of our customers complained of stunted plants. I, myself, had some of my plants turn yellow, but a great many others to whom we wrote, told us their plants did fine. Cornell University said our chip-board bands gave them entire satisfaction.

From experiments we found that cardboard being thicker tended to retain moisture and through some action, bacteria or otherwise, under certain conditions of air and weather, caused the soil to become sour. These experiments have absolutely proven that there is no poisonous substance in cardboard itself. The Bureau of Plant Industry at Washington has told us that although there might be some free chlorine or sulphuric acid left in the paper after being manufactured, the quantity would be so small that it could do no harm to the most tender roots.

## To Overcome Stunted Plants

This season my pansies were late and in order to save work I made the first transplanting direct to two-inch bands. At first I did not notice that these plants were not doing well, but after several weeks I saw that they were standing still. Upon examining the plants I found that there was a growth of mold on the inside of the paper and that the tiny roots, on coming in contact with this, turned brown. The plants were so small that they could not draw water fast enough to keep the soil sweet. Later in the season I experimented with spraying the bands in the flats, before planting, with several different copper fungicides and found that I was not troubled with the mold on the ones treated.

**HOW LONG WILL THEY LAST?**—The lasting qualities of paper bands depends a whole lot upon the way the plants are grown in them when ordinary paper is used. For instance, plants grown properly will take up the water from the soil which is replaced by air and under this continuous first wet and then practically dry condition of the soil, the paper does not deteriorate very much. I have had plants in bands several months which came out of the flats in fine condition, yet again, I tried to start cannas in bands one year, and on account of the extra moisture necessary to start and grow them, the bands did not hold up six weeks.

## PART THREE

# PLANTS THAT I HAVE GROWN IN BANDS

**TOMATOES**—I start my earliest tomatoes about January 31. I do not grow many of these as by setting-out time, May 20, they will be large plants in blossom and fruit and will sell at 25c each. The seedlings are transplanted several times, grading them each time to one size and throwing the weak ones away, until the middle of April



they are placed in four-inch bands. A later sowing made about February 20, will take three-inch bands, and March 15 I sow my largest crop. These are transplanted once or twice depending on the season and then in April are placed in two-inch bands. These sell at from 40c to 50c per dozen. March 31, another sowing is made and the strong plants planted direct in the 1¾-inch bands, which sell at 25c to 35c a dozen. A whole lot depends upon the season. Last year was very early and a great number of my plants were too large. March and April were very warm and sunshiny and the plants grew very rapidly under the glass.

#### EARLY CABBAGE, CAULIFLOWER AND KOHL RABBI—

Are started in February for the earliest plants, and by growing them



A sturdy plant.

cold, held back. Stalky plants are produced which are transplanted and graded several times and finally planted in two-inch bands the last of March or the first of April, depending upon the season. If these plants are grown warm they are apt to make heads in the bands. The plants should sell at from 35c to 50c depending upon the market. March 15, I make my main sowing of these plants and of late cauliflower and kohlrabi. They are transplanted and graded once or twice and placed in 1¾-inch bands in April. These sell at from 25c to 35c a dozen, and by the flat considerable cheaper. Some times a later sowing is made, the plants being transplanted direct to the bands. I have had some demand for late cabbage in bands which are started about March 31, and transplanted once to

flats from which they are sold. Grow all of the above mentioned plants as cool as possible, giving them at all times plenty of air and your customers will come back next year asking for more.

**EGG PLANTS AND PEPPERS** Are started in February and are handled the same as tomatoes. They are graded to two sizes which are placed in three-inch bands early in April. These plants do not make the rapid growth that tomatoes do, but should be grown warm and kept as close to the glass as possible. One year I had a number of pepper plants, part of which were in bands and part in 2¼-inch pots. These were on a shelf close to the glass. The evaporation was rapid in late April and May, and although these plants were the same size when planted, the ones in the bands more than doubled the size of the ones in pots by March 20.



Ready to plant.

**PANSIES**—Are started January 1, and grown much like cabbage, except that they are placed in two-inch bands in March. If they get too much heat they are apt to string out. They should also be pinched back at first.

**MELONS AND CUCUMBERS**—Are sown several seeds in three-inch and four-inch bands or pots about April 15. These must be kept warm and as soon as they come up, placed where they will get plenty of sun. Special care must be taken in watering them as the ground should not be kept soggy or the plants are apt to damp-off. When the plants are from two or three inches high all but two or three of the strongest are removed.

**SWEET PEAS**—Are sown in two-inch bands and handled like cucumbers, except that they are started about April 1 and grown colder.

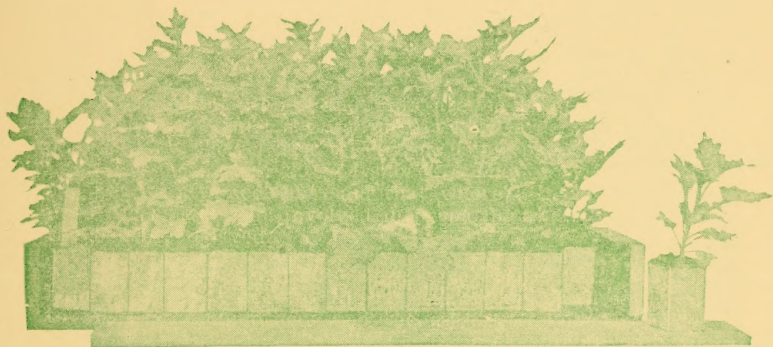
**ASTERS**—The earliest asters are started about March 1, and handled like tomatoes and are placed in two-inch bands in April. Later plantings from March 15 to April 15 are planted in two-inch or 1¾-inch bands. There are a number of other seedlings such as snap dragon and a lot of annuals that can be grown in bands, but the same general directions will cover their care, if the nature of the plant is kept in mind.

It must be remembered that the dates mentioned are for the latitude of southern Minnesota.

**PLANTS FROM CUTTINGS**—Last year I had a number of carnations and chrysanthemum cuttings in bands.



The carnation were placed in 1¼-inch bands in December, January and February, and when transplanted to the field in May were in better shape and handled better than the ones I had in 2½-inch clay pots; besides they did not take half the room that the 2½-inch pot-plants did in the bench.



How easy to crate for shipment.

The chrysanthemums were placed in two-inch bands in March, pinched back in April and benched in June. They made some of the best plants I have ever had. The carnations were in bands several months and the bands were in good condition when the plants were set out. The work of transplanting was very much faster than that of the pot plants. I also started several hundred vincas in 1¼-inch bands in January and February, planting these in the field in May. The bands remained in good condition and the plants handled perfectly. One-inch bands would have been large enough for the carnations and vincas, but I used 1¼-inch as I did not have the others. Last season I grew several hundred Mme. Salleri in two-inch bands, placing the cuttings in the bands direct from the cutting bench in October. These I carried on a shelf during the winter and on the dry side until spring. They made fine plants and handled well when sold in May and June. I also grew several hundred Marguerites in the same way. Last year I started my cannas in flats and about April 10, I transplanted part of them into three-inch bands with bottoms. They did fine and handled well in May and June.

There are a number of other cuttings which I have grown successfully, such as coleus, feverfew, sweet allyssum, etc. The main point to bear in mind is not to have the plants in the bands so long that either the top growth smothers part of the plants or the roots grow together. Some slow growing plants such as vincas can be kept in the bands longer than the fast growing ones, such as coleus or daisies. Sometimes if the season is early, and if the plants have made too heavy a top growth, it will be necessary to remove them from the flats and space them so as to give them more air circula-



tion. This can be done if it is not too long before they will be disposed of. A week or 10 days or possibly two weeks but not longer.

There are only a few plants which I have tried in bands which did not do better than in clay pots. Geraniums in three-inch and four-inch bands did not do well. They could not be grown in flats on account of their tops being too large and when the plants were spaced so as to give them more room only a few weeks were necessary for the roots to spread in the cinders and then cause a set-back when moved. Geraniums direct from the cutting bench in two-inch bands did well when sold in time. The roots of the *Bellis Perennis* are so penetrating that they grew through the paper and when it came time to remove them, the plants had locked together so that it was nearly impossible to separate them.

**ONE OF THE BEST FEATURES OF BANDS** is their adaptability to the wholesale growing and shipping of two and two and one-half inch pot plants. Twice as many plants can be grown with less work than when planted in clay pots; and besides the work of preparing for shipment is very small. It is only necessary to nail an upright at the corner on each end of the flat with a piece across the top and then a top and sides of slats can be readily nailed to these. With pot plants there is the work of removing them from the pots, wrapping each individual plant and cleating them in the boxes.

Plants crated do not suffer from lack of air. They are handled with more care by the expressmen than when placed in tight boxes which do not show what they contain and arrive at their destination in much better shape. When received they should be watered and shaded for two or three days and then placed in the sun or replanted as desired.

These plants will be found to have less set-back than the ones from clay pots. Of course, there is a slightly increased cost of shipping as bands contain more earth than pots of a given size, but band plants can be sold cheaper and this in connection with their better shape on arrival will more than off-set the higher shipping cost.

Another feature of the band is that it can be used as a cut-worm guard. After placing the plants in the field, put either a two-inch or three-inch band over the plant and bank it up slightly with earth to anchor it.

Now, again, I wish to emphasize the importance of watching the watering carefully. It is nearly impossible to over-water chrysanthemum cuttings in bands, as their leaf area is so great that they will handle all of the moisture the soil will accept, but with the weaker seedlings, especially in cold cloudy weather, examine the soil very carefully before watering.



PLANTING

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